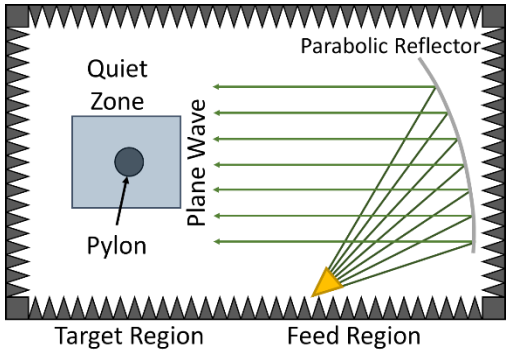


RASCAL AT A GLANCE

Chamber Dimensions:
35’ L x 18’ W x 14’ H
Quiet Zone Dimensions:
3’ W x 2’ H (typ.)
Polarizations:
Linear and Circular
Frequency Coverage:
1-110 GHz

FEATURES

Rapid Prototype Measurements

Large, Wideband Array Measurements

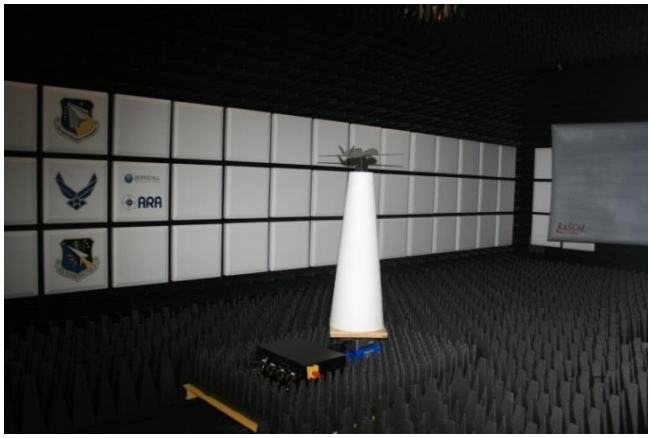
Integrated Measurement of Subsystems with Digital Backends

AIR FORCE RESEARCH LABORATORY

U.S. AIR FORCE

AFRL SENSORS DIRECTORATE

RADIATION AND SCATTERING COMPACT ANTENNA LABORATORY



RASCAL

Measurement System

The measurement system in RASCAL is built around a Keysight N5247A 67 GHz 4-port VNA. The system includes a 24-port MUX for multiple simultaneous measurements for reduced measurement time and also frequency extensions up to 100 GHz.

Frequency (GHz)	# of Ports
40	24
67	4
100	1

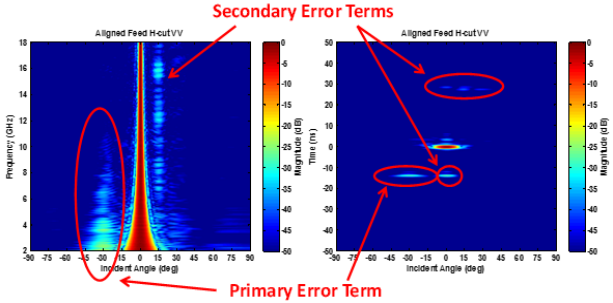
Motion System

Six axis controller for precise movement. Four AUT axes: azimuth, elevation, roll and linear. Two axes for feed: focal plane and polarization alignments.

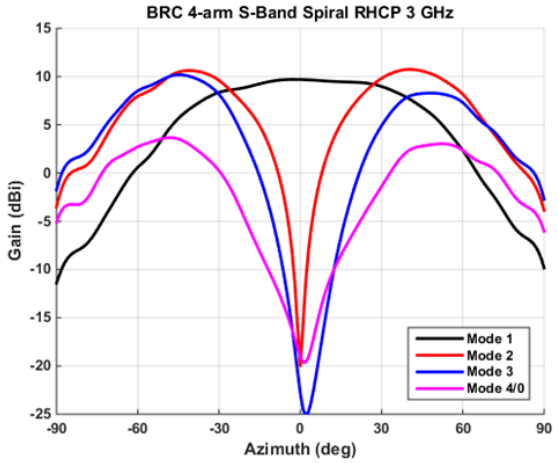
Multi-axis motion enables accurate measurements for full hemispherical data collection/processing.

Processing Capabilities

RASCAL has the capability to perform time-domain based post-processing on measured data as well as hardware gating to eliminate sources of error within the range itself.

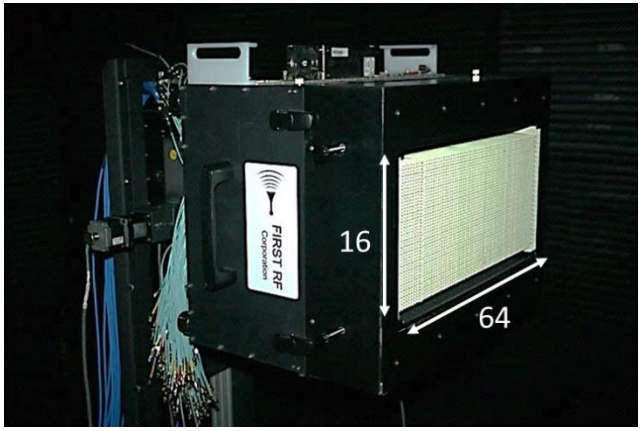


Processing is also available for multi-arm spiral antennas for the generation of modal patterns.



Wideband Arrays / Digital Backend Measurements

The RASCAL system was designed with the measurement of large, wideband arrays in mind with a 24-port MUX and plane wave phase errors < ±5° across the quiet zone.



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